

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



**FILED**

01-18-08  
04:59 PM

Order Instituting Rulemaking to Implement the  
Commission's Procurement Incentive Framework and to  
Examine the Integration of Greenhouse Gas Emissions  
Standards into Procurement Policies.

Rulemaking 06-04-009  
(Filed April 13, 2006)

**BEFORE THE CALIFORNIA ENERGY COMMISSION**

AB 32 Implementation – Greenhouse Gas  
Emissions.

Docket #07-OIIP-01

**REPLY COMMENTS OF THE WESTERN POWER TRADING FORUM  
ON MODELING RELATED ISSUES**

Clare Breidenich  
224 ½ 24th Avenue East  
Seattle, Washington 98112  
Telephone: (206) 829-9193  
Email: [clare@wptf.org](mailto:clare@wptf.org)

Daniel W. Douglass  
DOUGLASS & LIDDELL  
21700 Oxnard Street, Suite 1030  
Woodland Hills, California 91367  
Telephone: (818) 961-3001  
Facsimile: (818) 961-3004  
Email: [douglass@energyattorney.com](mailto:douglass@energyattorney.com)

Consultant to the  
**WESTERN POWER TRADING FORUM**

Attorneys for the  
**WESTERN POWER TRADING FORUM**

Date: January 18, 2008

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Implement the  
Commission's Procurement Incentive Framework and to  
Examine the Integration of Greenhouse Gas Emissions  
Standards into Procurement Policies.

Rulemaking 06-04-009  
(Filed April 13, 2006)

**BEFORE THE CALIFORNIA ENERGY COMMISSION**

AB 32 Implementation – Greenhouse Gas  
Emissions.

Docket #07-OIIP-01

**REPLY COMMENTS OF THE WESTERN POWER TRADING FORUM  
ON MODELING RELATED ISSUES**

In accordance with the direction provided in the November 9, 2007 Administrative Law Judge's Ruling in Rulemaking 06-04-009 (November 9 Ruling"), the Western Power Trading Forum ("WPTF") respectfully submits the following reply comments on the questions posed therein regarding modeling related issues.

**I. INTRODUCTION**

WPTF has read with interest the opening comments, and welcomes the many useful suggestions to improve the modeling of greenhouse gas emission ("GHG") reductions for the electricity sector. We note that many parties – e.g., SCE, PG&E, DRA, IEP, and SGDE – share WPTF's concern regarding the sensitivity of the modeling approach to input assumptions, particularly the availability of low-carbon resources and energy efficiency. We are also

encouraged that most parties agree that more consideration should be given in the modeling to the potential impacts of enhanced reliance on renewable resources on electric system reliability. These comments emphasize the need for modeling a full range of GHG emissions reduction scenarios, rather than the base and reference cases presented by E3 to date.

Several other parties also echoed WPTF's concern that the modeling approach does not address environmental dispatch – an option that is explicitly being addressed in this proceeding through consideration of a source-based or first-seller approach to a cap and trade system in the electricity sectors. We reiterate the need to model environmental dispatch by running Plexos with carbon prices reflected in variable cost dispatch.

Finally, WPTF disputes statements made by several parties regarding the appropriateness of a cap and trade system for reducing electric sector emissions. Emission trading has the potential to substantially reduce the cost of achieving GHG reductions, while aligning financial incentives with emissions reductions and should be a core component of the modeling work.

We provide more discussion of these comments below.

## **II. INPUT ASSUMPTIONS**

SCE, PG&E, SDGE, and SCPPA share WPTF's concern that overly optimistic supply and cost assumptions for renewable resources and energy efficiency may distort model results. However, NRDC/UCS, GPI and CEERT have made several assertions that WPTF believes would result in even lower cost assumptions in the model than originally proposed and additional distortion of the results. For example:

- Wind integration costs will be lower than expected. (NRDC, pp. 10-11; CEERT, p. 35)
- Firing for wind per se is not needed. (NRDC, p.13)

- Needed transmission capacity for wind may be less than E3 suggests. (NRDC, p. 15; CEERT, p. 37-38)
- Natural gas prices and demand should be lower due to increased reliance on renewable resources. (NRDC, p. 17)

We also note that CEERT has proposed alternative Base and Reference cases. CEERT has not provided sufficient descriptions of their alternative proposed cases to understand the differences between their proposed cases and the cases E3 is using thus far. However, it appears that their cases are all variants of E3's aggressive policy scenario. WPTF has no objections to the consideration of alternative cases. In fact, WPTF believes it is helpful to simulate a variety of cases. At the same time, however, WPTF recognizes that there are not "right cases" and "wrong cases." Instead any case is simply a representation of a possible future state, and the outputs of that case would be dependent upon the case definition. Therefore, WPTF believes that it is more important that the model simulate a range of input assumptions, rather than simply the high-end of resource availability and the low-end of costs. The fact that parties to this proceeding have such widely different views about input assumptions underscores the need to fully understand the sensitivity of GHG costs estimates to these assumptions. In order to provide Commissioners with a means to evaluate the uncertainty regarding these assumptions, and the consequences of guessing incorrectly, we support the recommendation of SCE that E3 should model a range of assumptions for key inputs (e.g. high-medium-low).

WPTF would also like to support the comments concerning the appropriateness of load forecasts used in the model. For instance, PG&E in its comments (pp. 7-8) raises some questions about the load forecasts and whether the CEC forecast is net of energy efficiency or not. Similarly, SCE raises the possibility that policies to promote GHG reductions in other sectors,

such as port electrification and plug-in hybrids, could increase load. WPTF supports the concern that the load forecasts should be fully understood and also believes there is value in performing sensitivity analysis around these forecasts. The establishment of workgroups to refine the data and input assumptions in phase two of the modeling, as proposed, would improve the rigor of the modeling effort.

### **III. MODELING OUTPUTS**

The November 9 Ruling asked parties to suggest output metrics that would be useful in evaluating the least-cost way of achieving emission reductions under AB32. In addition to impacts on a broader set of market participants (e.g., smaller LSEs and generators), which we suggested in opening comments, WPTF supports suggestions for the modeling to provide annual costs and marginal costs.

### **IV. ENVIRONMENTAL DISPATCH**

As WPTF noted in opening comments, the current model is ill-equipped to fully evaluate alternative GHG policy options, due to the fact that GHG Calculator' assumes a load-based approach and is therefore not able to evaluate potential emissions reductions from incorporating carbon costs into dispatch. This concern was echoed by several parties, including SCE, PG&E, and DRA. LADWP criticized the model for assuming "a single WECC-wide economic dispatch on the basis of variable cost with no variable adder for carbon." WPTF agrees that this is a significant deficiency in the model. The solution, as WPTF recommended in opening comments, is to run the Plexos model with carbon prices reflected in variable cost dispatch to enable assessment of alternative regulatory approaches. A working group should be tasked with developing one or more Plexos/E3 scenarios to reflect an environmental dispatch that mirrors possible regulatory approaches for a CA-only GHG market and for a WECC-wide GHG market.

WPTF disputes the assertion by SCCPA that incorporation of carbon cost in generator dispatch is inappropriate as a policy option because it would raise wholesale electricity prices. In WPTF's view, the overall objective of a market-based approach is to capture the environmental externality associated with GHG emissions into prices. An increase in power prices would be an expected, and desirable, effect of the policy because it sends an important price signal for valuation of low-carbon resources and energy efficiency. Failure to consider environmental dispatch of generation ignores the potential of alternative trading system designs to reduce carbon-intensive imports through environmental dispatch.

## **V. OPPOSITION TO CAP-AND-TRADE SYSTEM**

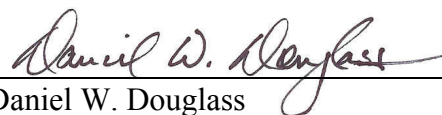
As many parties to this proceeding have noted, a cap-and-trade system has the potential to significantly reduce the costs of achieving GHG emission reductions compared to other regulatory approaches, while also aligning financial incentives with emissions reductions. This is particularly important in view of the long-term challenge of climate change; regulators are not developing a short-term program, but one that will continue for potentially 50 years or longer. As emission caps become tighter over this period, the economic advantages of a cap and trade system will become greater. Further, delay of a cap-and-trade system would forego California's leadership role under AB32, and put the state beyond the curve vis-à-vis a national or regional program.

For this reason, WPTF disagrees with the argument of SCCPA, LADWP and CEERT that the modeling should focus solely on LSE procurement rather than emissions trading. For instance, LADWP asserts that "the focus of the analytical support for AB 32 compliance must be the adopted and approved resource plans of the LSEs, not the output of the PLEXOS model." As numerous parties to this proceeding have previously stated, a GHG policy that is based solely on

LSE procurement will be unacceptably prone to contract shuffling. Recognition of this flaw led the Market Advisory Committee to recommend an alternative model – the ‘first-seller’ approach. LSE procurement plans will undoubtedly affect the cost to consumers of any GHG policy implemented, and should therefore be taken into account in assessing the impacts on individual LSEs and consumers. However, for the modeling exercise to be useful to policy-makers and enable evaluation of alternative options, it is essential that the model also evaluate the cost and emission reduction potential for GHG trading for all the various models under consideration.

WPTF appreciates this opportunity to comment and the Commission’s consideration of the discussion provided herein.

Respectfully submitted,



Daniel W. Douglass  
DOUGLASS & LIDDELL  
21700 Oxnard Street, Suite 1030  
Woodland Hills, California 91367  
Telephone: (818) 961-3001  
Facsimile: (818) 961-3004  
Email: [douglass@energyattorney.com](mailto:douglass@energyattorney.com)

Attorneys for the  
**WESTERN POWER TRADING FORUM**

Date: January 18, 2008

### **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served a copy of Reply Comments of the Western Power Trading Forum on Modeling Related Issues on all parties of record in proceeding R.06-04-009 by serving an electronic copy on their email addresses of record and by mailing a properly addressed copy by first-class mail with postage prepaid to each party for whom an email address is not available.

Executed on January 18, 2008, at Woodland Hills, California.

A handwritten signature in dark ink, appearing to read "Michelle Dangott", is written over a horizontal line. The signature is fluid and cursive.

Michelle Dangott



## SERVICE LIST

**R.06-04-009**

cadams@covantaenergy.com  
steven.schleimer@barclayscapital.com  
steven.huhman@morganstanley.com  
rick\_noger@praxair.com  
keith.mccrea@sablaw.com  
ajkatz@mwe.com  
ckrupka@mwe.com  
kyle\_boudreaux@fpl.com  
cswollums@midamerican.com  
Cynthia.A.Fonner@constellation.com  
kevin.boudreaux@calpine.com  
trdill@westernhubs.com  
ej\_wright@oxy.com  
pseby@mckennalong.com  
todil@mckennalong.com  
steve.koerner@elpaso.com  
jenine.schenk@apses.com  
jbw@slwplc.com  
kelly.barr@srpnet.com  
rrtaylor@srpnet.com  
smichel@westernresources.org  
roger.montgomery@swgas.com  
Lorraine.Paskett@ladwp.com  
ron.deaton@ladwp.com  
snewsom@semprautilities.com  
dhuard@manatt.com  
curtis.kebler@gs.com  
dehling@klng.com  
gregory.koiser@constellation.com  
npedersen@hanmor.com  
mmazur@3phasesRenewables.com  
vitaly.lee@aes.com  
tiffany.rau@bp.com  
klatt@energyattorney.com  
rhelgeson@scppa.org  
douglass@energyattorney.com  
pssed@adelphia.net  
bwallerstein@aqmd.gov  
akbar.jazayeri@sce.com  
annette.gilliam@sce.com  
cathy.karlstad@sce.com  
Laura.Genao@sce.com  
rkmoore@gswater.com  
dwood8@cox.net  
atrial@sempra.com  
apak@sempraglobal.com  
dhecht@sempratradng.com  
daking@sempra.com  
svongdeuane@semprasolutions.com

troberts@sempra.com  
liddell@energyattorney.com  
marcie.milner@shell.com  
rwinthrop@pilotpowergroup.com  
tdarton@pilotpowergroup.com  
lschavrien@semprautilities.com  
GloriaB@anzaelectric.org  
llund@commerceenergy.com  
thunt@cecmail.org  
jeanne.sole@sfgov.org  
john.hughes@sce.com  
llorenz@semprautilities.com  
marcel@turn.org  
nsuetake@turn.org  
dil@cpuc.ca.gov  
fjs@cpuc.ca.gov  
achang@nrdc.org  
rsa@a-klaw.com  
ek@a-klaw.com  
kgrenfell@nrdc.org  
mpa@a-klaw.com  
sls@a-klaw.com  
bill.chen@constellation.com  
epoole@adplaw.com  
agrimaldi@mckennalong.com  
bcragg@goodinmacbride.com  
jsqueri@gmsr.com  
jarmstrong@goodinmacbride.com  
kbowen@winston.com  
lcottle@winston.com  
mday@goodinmacbride.com  
sbeatty@cwclaw.com  
vprabhakaran@goodinmacbride.com  
jkarp@winston.com  
jeffgray@dwt.com  
cjw5@pge.com  
ssmyers@att.net  
lars@resource-solutions.org  
alho@pge.com  
bk7@pge.com  
aweller@sel.com  
jchamberlin@strategicenergy.com  
beth@beth411.com  
kerry.hattevik@mirant.com  
kowalewska@calpine.com  
wbooth@booth-law.com  
hoerner@redefiningprogress.org  
janill.richards@doj.ca.gov  
cchen@ucsusa.org

gmorris@emf.net  
tomb@crossborderenergy.com  
kjinnovation@earthlink.net  
bmcc@mccarthylaw.com  
sberlin@mccarthylaw.com  
Mike@alpinenaturalgas.com  
joyw@mid.org  
bdicapo@caiso.com  
UHelman@caiso.com  
jjensen@kirkwood.com  
mary.lynn@constellation.com  
lrdevanna-rf@cleanenergysystems.com  
abb@eslawfirm.com  
mclaughlin@braunlegal.com  
glw@eslawfirm.com  
jluckhardt@downeybrand.com  
jdh@eslawfirm.com  
vwelch@environmentaldefense.org  
www@eslawfirm.com  
westgas@aol.com  
schohn@smud.org  
atrowbridge@daycartermurphy.com  
dansvec@hdo.net  
notice@psrec.coop  
deb@a-klaw.com  
cynthia.schultz@pacificorp.com  
kyle.l.davis@pacificorp.com  
ryan.flynn@pacificorp.com  
carter@ieta.org  
jason.dubchak@niskags.com  
bjones@mjb Bradley.com  
kcolburn@symbioticstrategies.com  
rapcowart@aol.com  
Kathryn.Wig@nrgenergy.com  
sasteriadis@apx.com  
george.hopley@barcap.com  
ez@pointcarbon.com  
burtraw@rff.org  
vb@pointcarbon.com  
andrew.bradford@constellation.com  
gbarch@knowledgeinenergy.com  
ralph.dennis@constellation.com  
smindel@knowledgeinenergy.com  
brabe@umich.edu  
bpotts@foley.com  
james.keating@bp.com  
jimross@r-c-s-inc.com  
tcarlson@reliant.com  
ghinners@reliant.com

zaiontj@bp.com  
julie.martin@bp.com  
fiji.george@elpaso.com  
echiang@elementmarkets.com  
fstern@summitblue.com  
nenbar@energy-insights.com  
nlenssen@energy-insights.com  
bbaker@summitblue.com  
william.tomlinson@elpaso.com  
kjsimonsen@ems-ca.com  
Sandra.ely@state.nm.us  
bmcquown@reliant.com  
dbrooks@nevp.com  
anita.hart@swgas.com  
randy.sable@swgas.com  
bill.schrand@swgas.com  
jj.prucnal@swgas.com  
sandra.carolina@swgas.com  
ckmitchell1@sbcglobal.net  
chilen@sppc.com  
emello@sppc.com  
tdillard@sierrapacific.com  
dsoyars@sppc.com  
jgreco@caithnessenergy.com  
leilani.johnson@ladwp.com  
randy.howard@ladwp.com  
Robert.Rozanski@ladwp.com  
robert.pettinato@ladwp.com  
HYao@SempraUtilities.com  
rprince@semprautilities.com  
rkeen@manatt.com  
nwhang@manatt.com  
pjazayeri@stroock.com  
derek@climaterestry.org  
david@nemtzw.com  
harveyederpspc.org@hotmail.com  
sendo@ci.pasadena.ca.us  
slins@ci.glendale.ca.us  
thamilton5@charter.net  
bjeider@ci.burbank.ca.us  
rmorillo@ci.burbank.ca.us  
aimee.barnes@ecosecurities.com  
case.admin@sce.com  
Jairam.gopal@sce.com  
tim.hemig@nrgenergy.com  
bjl@bry.com  
aldyn.hoekstra@paceglobal.com  
ygross@sempraglobal.com  
jlaun@apogee.net  
kmkiener@fox.net  
scottanders@sandiego.edu  
jkloberdanz@semprautilities.com  
andrew.mcallister@energycenter.org

jennifer.porter@energycenter.org  
sephra.ninow@energycenter.org  
dniehaus@semprautilities.com  
jleslie@luce.com  
ofoote@hkcf-law.com  
ekgrubaug@iid.com  
pepper@cleanpowermarkets.com  
gsmith@adamsbroadwell.com  
mdjoseph@adamsbroadwell.com  
Diane\_Fellman@fpl.com  
hayley@turn.org  
mflorio@turn.org  
Dan.adler@calcef.org  
mhyams@sfwater.org  
tburke@sfwater.org  
norman.furuta@navy.mil  
amber@ethree.com  
annabelle.malins@fco.gov.uk  
dwang@nrdc.org  
filings@a-klaw.com  
nes@a-klaw.com  
obystrom@cera.com  
sdhilton@stoel.com  
scarter@nrdc.org  
abonds@thelen.com  
cbasket@enernoc.com  
colin.petheram@att.com  
jwmctarnaghan@duanemorris.com  
kfox@wsgr.com  
kkhoja@thelenreid.com  
pvalen@thelen.com  
ray.welch@navigantconsulting.com  
spauker@wsgr.com  
jwmctarnaghan@duanemorris.com  
rreinhard@mofo.com  
cem@newsdata.com  
arno@recurrentenergy.com  
hgolub@nixonpeabody.com  
jscancarelli@flk.com  
jwiedman@goodinmacbride.com  
mmattes@nossaman.com  
bwetstone@hotmail.com  
jen@cnt.org  
lisa\_weinzimer@platts.com  
steven@moss.net  
sellis@fypower.org  
BRBc@pge.com  
ELL5@pge.com  
gxl2@pge.com  
jxa2@pge.com  
JDF1@PGE.COM  
RHHJ@pge.com  
sscb@pge.com

S1L7@pge.com  
vjw3@pge.com  
karla.dailey@cityofpaloalto.org  
farrokh.albuyeh@oati.net  
dtibbs@aes4u.com  
jhahn@covantaenergy.com  
andy.vanhorn@vhcenergy.com  
Joe.paul@dynegy.com  
info@calseia.org  
gblue@enxco.com  
sbeserra@sbcglobal.net  
monica.schwebs@bingham.com  
phanschen@mofo.com  
josephhenri@hotmail.com  
pthompson@summitblue.com  
dietrichlaw2@earthlink.net  
Betty.Seto@kema.com  
JerryL@abag.ca.gov  
jody\_london\_consulting@earthlink.net  
steve@schiller.com  
mrw@mrwassoc.com  
rschmidt@bartlells.com  
adamb@greenlining.org  
stevek@kromer.com  
clyde.murley@comcast.net  
brenda.lemay@horizonwind.com  
carla.peterman@gmail.com  
elvine@lbl.gov  
rhwiser@lbl.gov  
C\_Marnay@lbl.gov  
philm@scdenergy.com  
rita@ritanortonconsulting.com  
cpechman@powereconomics.com  
emahlon@ecoact.org  
richards@mid.org  
rogerv@mid.org  
tomk@mid.org  
fwmonier@tid.org  
brbarkovich@earthlink.net  
johnrredding@earthlink.net  
clark.bernier@rlw.com  
rmccann@umich.edu  
cmkehrlein@ems-ca.com  
groenblum@caiso.com  
mgillette@enernoc.com  
rsmutny-jones@caiso.com  
saeed.farrokhpay@ferc.gov  
e-recipient@caiso.com  
david@branchcomb.com  
kenneth.swain@navigantconsulting.com  
kdsel@navigantconsulting.com  
gpickering@navigantconsulting.com  
lpark@navigantconsulting.com

jack.burke@energycenter.org  
scott.tomashefsky@ncpa.com  
ewolfe@resero.com  
Audra.Hartmann@Dynergy.com  
Bob.lucas@calobby.com  
curt.barry@iwpnews.com  
danskopec@gmail.com  
dseperas@calpine.com  
dave@ppallc.com  
dkk@eslawfirm.com  
wynne@braunlegal.com  
kgough@calpine.com  
kellie.smith@sen.ca.gov  
kdw@woodruff-expert-services.com  
mwaugh@arb.ca.gov  
pbarthol@energy.state.ca.us  
pstoner@lgc.org  
rachel@ceert.org  
bernardo@braunlegal.com  
steven@lipmanconsulting.com  
steven@iepa.com  
wtasat@arb.ca.gov  
lmh@eslawfirm.com  
etiedemann@kmtg.com  
ltenhope@energy.state.ca.us  
bushinskyj@pewclimate.org  
obartho@smud.org  
bbeebe@smud.org  
bpurewal@water.ca.gov  
dmacmull@water.ca.gov  
kmills@cfbf.com  
karen@klindh.com  
ehadley@reupower.com  
sas@a-klaw.com  
kyle.silon@ecosecurities.com  
californiadockets@pacificorp.com  
cfl@cpuc.ca.gov

svs6@pge.com  
cft@cpuc.ca.gov  
tam@cpuc.ca.gov  
dsh@cpuc.ca.gov  
edm@cpuc.ca.gov  
eks@cpuc.ca.gov  
cpe@cpuc.ca.gov  
hym@cpuc.ca.gov  
jm3@cpuc.ca.gov  
jnm@cpuc.ca.gov  
jbf@cpuc.ca.gov  
jk1@cpuc.ca.gov  
jst@cpuc.ca.gov  
jtp@cpuc.ca.gov  
jol@cpuc.ca.gov  
jci@cpuc.ca.gov  
jf2@cpuc.ca.gov  
krd@cpuc.ca.gov  
lrm@cpuc.ca.gov  
ltt@cpuc.ca.gov  
mjd@cpuc.ca.gov  
ner@cpuc.ca.gov  
pw1@cpuc.ca.gov  
psp@cpuc.ca.gov  
pzs@cpuc.ca.gov  
rmm@cpuc.ca.gov  
ram@cpuc.ca.gov  
smk@cpuc.ca.gov  
sgm@cpuc.ca.gov  
svn@cpuc.ca.gov  
scr@cpuc.ca.gov  
egw@a-klaw.com  
akelly@climatetrust.org  
alan.comnes@nrgenergy.com  
Philip.H.Carver@state.or.us  
samuel.r.sadler@state.or.us  
lisa.c.schwartz@state.or.us

davidreynolds@ncpa.com  
tcx@cpuc.ca.gov  
ken.alex@doj.ca.gov  
ken.alex@doj.ca.gov  
jsanders@caiso.com  
jgill@caiso.com  
ppettingill@caiso.com  
mscheibl@arb.ca.gov  
gcollord@arb.ca.gov  
jdoll@arb.ca.gov  
pburmich@arb.ca.gov  
bblevins@energy.state.ca.us  
dmetz@energy.state.ca.us  
deborah.slone@doj.ca.gov  
dks@cpuc.ca.gov  
kggriffin@energy.state.ca.us  
ldecarlo@energy.state.ca.us  
mprior@energy.state.ca.us  
mgarcia@arb.ca.gov  
pduvair@energy.state.ca.us  
wsm@cpuc.ca.gov  
ntronaas@energy.state.ca.us  
hurlock@water.ca.gov  
hchronin@water.ca.gov  
rmiller@energy.state.ca.us  
cbreidenich@yahoo.com  
dws@r-c-s-inc.com  
jesus.arredondo@nrgenergy.com  
charlie.blair@delta-ee.com  
Tom.Elgie@powerex.com  
clarence.binninger@doj.ca.gov  
david.zonana@doj.ca.gov  
ayk@cpuc.ca.gov  
agc@cpuc.ca.gov  
aeg@cpuc.ca.gov  
blm@cpuc.ca.gov  
bbc@cpuc.ca.gov